

CLAIMS

We claim:

- 5 1. A biochip cartridge comprising:
 a) a reaction chamber comprising:
 i) a substrate comprising an array of electrodes, each comprising:
 A) a self-assembled monolayer; and
 B) a capture binding ligand;
 II) an inlet port for the introduction of reagents; and
 b) interconnects to allow the electrical connection of said electrodes to a processor.
- 10 2. A biochip cartridge according to claim 1 wherein said capture binding ligands are capture probes.
- 15 3. A biochip cartridge according to claim 1 wherein said reaction chamber further comprises a gasket to retain fluid in contact with said array.
- 20 4. A biochip cartridge according to claim 1 further comprising a seal on said inlet port.
- 25 5. A biochip cartridge according to claim 1 wherein said reaction chamber further comprises an outlet port.
- 30 6. A biochip cartridge according to claim 1 wherein said reaction chamber is configured to minimize the introduction or retention of air bubbles upon introduction of a sample.
- 35 7. A biochip cartridge according to claim 1 wherein said array is on one surface of said substrate.
8. A biochip cartridge according to claim 1 wherein two surfaces of said substrate each comprise an array.
9. A biochip cartridge according to claim 1 further comprising a cap comprising at least one storage well comprising assay reagents.
10. A device for multiple biochip analysis comprising at least two stations configured to receive a biochip cartridge.
11. A device according to claim 10 wherein at least one station comprises a thermocontroller.
12. A device according to claim 10 wherein every station comprises a thermocontroller.

13. A device according to claim 10 wherein at least one station comprises a signalling system.

14. A device according to claim 10 wherein at least one station comprises a memory chip reader.

5 15. A device according to claim 10 wherein at least one station comprises a barcode reader.

16. A device according to claim 10 wherein at least one station comprises a memory chip writer.

17. A device according to claim 10 wherein at least one station comprises an encryption system.

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18. A device according to claim 10 further comprising at least two biochip cartridges.

19. A device according to claim 10 further comprising a liquid handling system.

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20. A device according to claim 10 further comprising a wireless communication component.

21. A device according to claim 10 further comprising a device board.

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22. A device according to claim 10 further comprising a processor.

23. A device according to claim 10 further comprising a global positioning system.